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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/755,472

01/13/2004

Joon-Woo Kim

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2292 7590 02/05/2007
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EXAMINER

RIGGLEMAN, JASON PAUL

ART UNIT

PAPER NUMBER

1746

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
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3 MONTHS

02/05/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/05/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/755,472	Applicant(s) KIM ET AL.	
	Examiner Jason P. Riggleman	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/11/2006, 6/3/2004, 6/30/2005</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "14", "a", "b", "c". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The

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disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In the instant application, the applicant uses the phrase "discloses" to describe the invention.

Claim Objections

3. Claims 13 and 16 objected to because of the following informalities: there is lack of antecedent basis in the specification for "sensing a firing angle". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5-6, 7, and 14 recite the limitations "wherein the step for changing the number of poles of the motor", "wherein the step for controlling the voltage applied to the motor", and "sensed data", respectively. There is insufficient antecedent basis for these limitations in these claims.

6. Claims 6-7 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In regards to the step of "sensing a dehydration speed desired by the user", it is unclear how a washing machine would perform such an operation. For purposes of examination, this is assumed to be – the dehydration speed is selected by the user on the basis of load size.

7. The term "quality" in claim 14 is a relative term which renders the claim indefinite. The term "quality" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would

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not be reasonably apprised of the scope of the invention. For purposes of examination, quality is assumed to be equivalent to any physical property of the clothes – including weight.

8. Claims 7, 9-11, 14, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to what constitutes “phase of the motor” and “phase of voltage”. For instance, are they the same?

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as being unpatentable by Sikamori et al. (US Patent No. 3872694).

10. Sikamori et al. teaches setting a program number, Fig 1., which controls the dehydration motor rotational speed of a drying basket according to the kind of clothes and articles to be washed (Column 2, Lines 0-5). A pole-change motor changes the pole number in accordance with the selected program number (Column 3, Lines 35-40). The washing machine is a drum washing machine, Fig. 1. The rotation speed of the washing machine motor proceeds by changing the number of poles of the motor changes the number of the poles into 4 or 8 (Fig. 4 – “Program Nos” 1 & 2) (Columns 4 and 5, Lines (0-68) and (0-35))(Column 6, Lines 40-46). The selection of the program number by the user can be considered “sensing” by the machine of the desired speed by the user.

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11. Claims 1, 3-4, and 6 are rejected under 35 U.S.C. 102(b) as being unpatentable by Shunichi et al. (Japanese Patent Publication No. 2000-014974).
12. Shunichi et al. teaches operating a pole-changing induction motor according to a washing load in the dehydration process, (paragraph [0011]). The amount of clothing is automatically determined in step 1703 (paragraph [0053]), and the rotational dehydration speed is controlled according to load size (paragraph [0061]), Fig. 1. A pole change motor is utilized which changes the number of poles of the motor in accordance with the wash load. The washing machine is a drum washing machine, Fig. 1. The pole-change motor changes the number of poles in accordance with the wash clothes volume (paragraphs [0061] & [0065] and abstract).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 2 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Shunichi et al. (Japanese Patent Publication No. 2000-014974), as applied to claim 1, and further in view of Raworth et al. (GB Patent No. 1169059).
15. Shunichi et al. does not teach controlling an applied voltage to the motor or converting speed; however, Raworth et al. teaches that precise speed regulation can be made by converting the motor speed into an electrical magnitude and a reference voltage to control motor speed (Columns 24-30). The reference voltage controls the

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dehydration speed of the motor (Columns 47-55). It would have been obvious to modify Shunichi et al. with Raworth et al. to create a method for controlling the speed of a pole-changing motor by controlling the voltage and converting the speed into an electrical magnitude to allow for precise speed regulation.

16. Claims 7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shunichi et al. (US Patent No. 3872694), as applied to claim 1, and further in view of Yamagishi (Japanese Patent Application No. 06-312085).

17. Shunichi et al. does not teach controlling/changing a phase of the voltage; however, Yamagishi teaches a phase-controlled voltage V1 (paragraphs [0012] – [0014]) which controls the motor speed. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shunichi et al. with Yamagishi to create a pole-changing driven washing machine with dependable electronic control, (paragraph [0004] of Yamagishi).

18. Claims 11, 13-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shunichi et al. (Japanese Patent Publication No. 2000-014974) in view of Yoshitaka (Japanese Patent Application Publication No. 62-185591).

19. Shunichi et al. teaches operating a pole-changing induction motor according to a washing load in the dehydration process, (paragraph [0011]). The amount of clothing is automatically determined in step 1703 (paragraph [0053]), and the rotational dehydration speed is controlled according to load size (paragraph [0061]), Fig. 1. A pole change motor is utilized which changes the number of poles of the motor in accordance with the wash load. The washing machine is a drum washing machine, Fig.

1. The pole-change motor changes the number of poles in accordance with the wash clothes volume (paragraphs [0061] & [0065] and abstract).

20. Shunichi et al. does not teach phase control of the voltage and varying a voltage according to a sensed fire angle; however, Yoshitaka teaches a washing machine in which the rotating speed of the induction motor is smoothly switched by controlling the firing angle of the energizing phase angle control means (energizing voltage to the motor). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shunichi et al. with Yoshitaka to create a smoothly switching washing machine speed control.

21. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shunichi et al. (Japanese Patent Publication No. 2000-014974), as applied to claims 11 and 14, and Yoshitaka (Japanese Patent Application Publication No. 62-185591), as applied to claims 11 and 14, and further in view of Sikamori et al. (US Patent No. 3872694).

22. Shunichi et al. and Yoshitaka do not teach a pole number of 4 or 8; however, Sikamori et al. teaches a pole-change motor in which the rotation speed of the washing machine motor proceeds by changing the number of poles of the motor into 4 or 8 (Fig. 4 – “Program Nos” 1 & 2) (Columns 4 and 5, Lines (0-68) and (0-35))(Column 6, Lines 40-46). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shunichi et al. and Yoshitaka with Sikamori et al. to create a pole-change motor (with 4 or 8 poles) which produces the known and expected result when controlling the dehydration speed by manipulating pole number in the dewatering step.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dumbser (UK Patent Application Publication No. GB2087933A) and Blazek et al. (US Patent No. 6531801) which teaches details of a pole-changing motor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason P. Riggleman whose telephone number is 571-272-5935. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason P Riggleman
Examiner
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JPR

A handwritten signature in black ink, appearing to read 'M. Barr', with a large, sweeping horizontal stroke underneath.

**MICHAEL BARR
SUPERVISORY PATENT EXAMINER**